Chapter 3: Solid Waste Generation, Collection, and Acceptance Systems

This section addresses all of the solid waste categories contained in COMAR 26.03.03.03.D (a) through (l). A series of data tables are provided with the existing and projected annual generation of each waste category. The section also addresses the collection methods and solid waste acceptance facilities that are available to manage each solid waste category.

Acronyms and solid waste terms used in this chapter and throughout this document are defined in Appendix A.

This chapter is organized into the following subsections:

3.1 SOLID WASTE GENERATION

Table 3.1 displays FY 2004 solid waste generation measurements by waste type as well as solid waste generation projections for the Fiscal Years 2008 and 2013[1]. Subsequent sections of this chapter repeat portions of Table 3.1 for further analysis of each major category of solid waste. All years referred to in these tables are fiscal years, unless stated otherwise.

As specified later in this section, most ten-year solid waste generation projections are calculated using M-NCPPC forecasts for County population and

[1] A five year history of tonnages received at County solid waste management facilities appears in Appendix B.

employment. These forecasts are included as Table 2.1 and Table 2.3 in Chapter 2 of this Plan.

The solid waste generation tables also distinguish between tonnages accepted at County operated solid waste management facilities versus facilities that are not part of the County-run solid waste management system described in Chapter 5 of this plan. Solid waste tonnages that are included in the tables below as being processed at "non-county facilities" are processed at privately operated facilities, most of which are located outside the boundaries of Montgomery County.

Data included in this Plan are gathered from a variety of sources. Certain solid waste data are obtained directly from scales at county facilities. For example, tons of refuse processed at the Transfer Station and tons of recyclables handled at the MRF are recorded on-site. Other data points are derived from external sources. The County requires private solid waste collectors to report the amount of refuse and recyclables transported to non-county facilities. Periodic studies commissioned by the County provide other key data points such as the changes in per capita or per employee waste generation rates, the relative composition of wastes in the disposal stream, and the degree of backyard composting and grasscycling occurring in the County.

Table 3.1

Municipal Solid Waste Generation in Montgomery County, Maryland (Tons/Yr)

	2004 Processed at County Gov't Facilities	2004 Processed at Private Facilities	2004 Estimated Generation In County	2008 Projected Generation In County	2013 Projected Generation In County
Municipal Solid Waste (MSW)	**857,258**	**399,389**	**1,256,647**	**1,342,986**	**1,419,985**
(a) Residential (Single-Family and Muti-Family)	**501,223**	**130,525**	**631,748**	**663,641**	**694,855**
Recycled	194,068	89,215	283,283	330,042	339,241
Disposed	307,156	41,310	348,466	333,599	355,614
Non-Residential	**356,034**	**268,864**	**624,899**	**679,345**	**725,130**
Recycled	36,648	152,019	188,667	233,153	306,504
Disposed including C&D burned at County RRF	319,387	116,845	436,232	446,192	418,626
State-Required Breakout of Non-Residential MSW					
(b) Commercial (67.1% of Non-Residential)	**238,899**	**180,408**	**419,307**	**455,841**	**486,562**
Recycled	24,591	102,005	126,596	156,446	205,664
Disposed	214,308	78,403	292,711	299,395	280,898
(c) Industrial (26.2% of Non-Residential)	**93,281**	**70,442**	**163,723**	**177,988**	**189,984**
Recycled	9,602	39,829	49,431	61,086	80,304
Disposed	83,679	30,613	114,293	116,902	109,680
(d) Institutional (6.7% of Non-Residential)	**23,854**	**18,014**	**41,868**	**45,516**	**48,584**
Recycled	2,455	10,185	12,641	15,621	20,536
Disposed	21,399	7,829	29,228	29,895	28,048
(e) Land Clearing and Construction & Demolition Debris (C&D)**	**60,959**	**90,549**	**151,507**	**208,664**	**208,664**
Non-Processibles outgoing from County TS & C&D Export by Haulers**					
(f) Hazardous Waste	**236**	**13,764**	**14,000**	**14,502**	**16,024**
(g) Special Medical Waste	**0**	**3,200**	**3,200**	**3,315**	**3,538**
(h) Animal Carcass	**0**	**4,000**	**4,000**	**4,261**	**4,462**
(i) Bulky Waste Scrap Metal [included in (a) through (d) a	8,987	42,587	51,574	54,945	57,529
(j) Automobiles	**0**	**61,700**	**61,700**	**65,733**	**68,824**
(k) Scrap Tires	**202**	**9,108**	**9,310**	**9,918**	**10,385**
(kk) Portion included in (a) through (d) above	202	2,121	2,323	*2,475*	*2,591*
(l) Biosolids	**0**	**1,600**	**1,600**	**6,980**	**8,620**
(m) Septage	**0**	**18,000**	**18,000**	**18,000**	**18,000**
TOTAL WASTE (all categories) * **	**918,452**	**599,189**	**1,517,641**	**1,671,885**	**1,755,911**

Notes:

* For FY04, "Processed at County Gov't. Facilities" = all tons loaded on rail to RRF. (Counts C&D burned at RRF as if it were MSW. See text.)

** Does not include C&D burned at RRF as MSW.

*** Sum of (a) through (m) less (i) less (kk).

3.1.1 Municipal Solid Waste (Residential, Commercial, Industrial, and Institutional)

Municipal Solid Waste (MSW) consists of solid waste generated at residences, commercial establishments and institutions. MSW does not include land clearing and demolition debris, controlled hazardous substances, automobiles, biosolids or other solid waste streams requiring specialized handling. These other solid waste types are discussed later in this chapter.

The recycling rate calculation report to the County Council is developed using a comprehensive accounting methodology that incorporates all data available on County MSW flows. Appendix C displays the result for the County for Fiscal Year 2004. The calculation is necessarily conservative in that it assumes that all waste burned at the RRF is MSW (during FY04, the County made no distinction between C&D and MSW for incoming loads).

Table 3.2 displays MSW recycled and disposed according to four categories specified in COMAR 26.03.03.03.D “residential waste”, “commercial waste”, “industrial waste” and “institutional waste”.

The total County MSW generation follows the methodology detailed in Appendix C which yields 1,256,648 tons, including any amounts of C&D burned at the RRF undistinguished from MSW. The County estimates that 100,583 tons of C&D were burned at the RRF in FY04 and therefore regarded as MSW[2]. Generation projections for Fiscal Years 2008 and 2013 are adjusted for increases in County population and employment only.

[2] See Appendix B.

Table 3.2

Municipal Solid Waste Generation in Montgomery County, Maryland (Tons/Yr)

Residential, Commercial, Industrial, and Institutional Sectors

	2004 Processed at County Gov't Facilities	2004 Processed at Private Facilities	2004 Estimated Generation In County	2008 Projected Generation In County	2013 Projected Generation In County
(a) Residential (Single-Family and Muti-Family)	**501,223**	**130,525**	**631,748**	**663,641**	**694,855**
Recycled	194,068	89,215	283,283	330,042	339,241
Disposed	307,156	41,310	348,466	333,599	355,614
(b) Commercial (67.1% of Non-Residential)	**238,899**	**180,408**	**419,307**	**455,841**	**486,562**
Recycled	24,591	102,005	126,596	156,446	205,664
Disposed	214,308	78,403	292,711	299,395	280,898
(c) Industrial (26.2% of Non-Residential)	**93,281**	**70,442**	**163,723**	**177,988**	**189,984**
Recycled	9,602	39,829	49,431	61,086	80,304
Disposed	83,679	30,613	114,293	116,902	109,680
(d) Institutional (6.7% of Non-Residential)	**23,854**	**18,014**	**41,868**	**45,516**	**48,584**
Recycled	2,455	10,185	12,641	15,621	20,536
Disposed	21,399	7,829	29,228	29,895	28,048
Municipal Solid Waste (MSW)	**857,258**	**399,389**	**1,256,647**	**1,342,986**	**1,419,985**
		Recycling Rate*	**37.6%**	**41.9%**	**45.5%**

* Projected recycling is conservative. It assumes approval of ER18-04, but it counts C&D burned in RRF as MSW, thus overstating recycling rate denominator.

Accounting of MSW generated in the County isindependent of the location at which the MSW was processed. Refuse generated in the County may be processed at the County's Transfer Station or at a private facility located outside the County. No privately operated MSW disposal facilities exist within the County. County recycling and composting facilities primarily handle materials generated by the single family residential sector. Recyclables generated by the multi-family residential and non-residential sectors are processed at both private facilities and the County MRF. Privately operated recycling facilities are located both within the County and in adjacent counties.

The County validates generation rates by analyzing public and private sector waste disposal and recycling practices. Executive Regulation 58-92 requires that all private haulers that are permitted to transport solid waste in the County must submit semiannual reports about their activity. Reports must specify: (1) quantities of recyclables by categories of material; (2) quantities of solid waste; and (3) quantities of special wastes including Controlled Hazardous Substances (CHS) and construction and demolition debris. Reports must indicate whether the material is delivered to destinations located inside or outside the County and must distinguish MSW from C&D.

3.1.1.1 Residential Solid Wastes

Residential solid waste consists of household waste generated both from single family and multi-family (e.g., apartment, condominium) residences. As shown previously in Table 3.1, residential solid waste generation in Fiscal Year 2004 was 631,748 tons. This total residential waste generation figure includes processed MSW as well as solid waste recycled or composted. These data have been derived using a combination of weight reports from the County's Solid Waste Transfer Station, MRF,

and Composting Facility records supplemented with information provided by licensed solid waste haulers.

In Fiscal Year 2004, the residential sector achieved a recycling rate of approximately 44.8 percent.[3] The overall residential recycling rate is based on a single family residential recycling rate of approximately 51.6 percent and a multi-family residential recycling rate of approximately 11.9 percent.
Projected recycling achievement depicted in Table 3.2 is conservative in that it assumes that all waste burned at the RRF was MSW (which was not, since it included C&D), thus overstating the denominator used in calculating the recycling rate.

3.1.1.2 Commercial, Industrial and Institutional Sources

Commercial, industrial and institutional solid wastes comprise all MSW generated from non-residential sources. Commercial solid waste generally consists of refuse and recyclables generated by offices, bars and restaurants, retail and wholesale establishments and hotels. Industrial solid waste consists of refuse and recyclables generated by manufacturing, transportation and utility activities. Institutional solid waste consists of refuse and recyclables generated primarily from health service, government and education activities.

A 1992 study of the County solid waste stream[4] measured non-residential waste generation in Montgomery County according to Standard Industry Codes (SIC). The study identified the following distribution of waste generation among the “commercial”, “industrial” and “institutional” non-residential sectors:

[3] See Section 3.1.10 for a comparison of County and State recycling rate calculations.

Sector	Percent of Non-Residential Waste Stream
Commercial	67.1%
Industrial	26.2%
Institutional	6.7%

Non-residential waste generation figures include both waste disposed and waste recycled. As indicated as the sum of lines (b) through (d) in Table 3.2 shown previously, non-residential waste generation in Fiscal Year 2004 was 624,899 tons. This includes 100,583 tons of C&D estimated to have been burned at the RRF during FY04 and presumed to be MSW (as discussed earlier). Commercial, industrial and institutional waste generation tonnages displayed in Table 3.2 shown previously reflect an allocation of total non-residential waste generation in proportion to the above distribution. Total non-residential waste generation data have been derived using weight reports from the County's Solid Waste Transfer Station, along with information provided by licensed solid waste haulers.

In Fiscal Year 2004, the non-residential sector is estimated to have achieved a recycling rate of 30.2 percent. Table 3.2 shown previously projects non-residential waste generation for the 10-year time horizon of this Plan using the per employee waste generation rate applied to County employment projections. Non-residential waste generation is projected to increase at the same rate. Projected recycling achievement depicted in Table 3.2 is conservative, in that it assumes that all waste burned at the RRF was MSW (which it was not, since it included C&D), thus overstating the denominator used in calculating the recycling rate.

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[4] "*Financial Information Systems: Generator Based Estimate of Waste Generation and Composition,*" ECODATA, Inc., October 1992.

3.1.2 Land Clearing and Construction and Demolition Debris (C&D)

Land clearing and demolition debris includes rock fragments, soil, masonry, concrete, asphalt, brick, glass, plastics, mortar, wood, paper and metals. When consolidated from a construction or demolition site, these materials are not MSW.

As indicated in Table 3.3, land clearing and demolition debris generation in the County was 124,049 tons recorded as C&D by truck scale records plus 90,549 processed by private facilities. This does not include an estimated 100,583 tons of burnable C&D that is estimated to have been included in materials sent to the RRF but presumed to be MSW for lack of distinction of C&D in County scale records for a total of 214,597 tons in FY2004. Transfer Station data used in this report are based on outgoing scale records for materials that are not processible at the RRF.

Land clearing and demolition debris generation rates are based on economic and population growth and the resulting need for land clearing and new construction. Based on the projected County population and employment change, generation for the Year 2013 is projected at 208,664 tons. This is without regard for economic condition influences.

Table 3.3

Land Clearing and Demolition Debris Generation in Montgomery County (Tons/Yr)

	2004 Processed at County Gov't Facilities	2004 Processed at Private Facilities	2004 Estimated Generation In County	2008 Projected Generation In County	2013 Projected Generation In County
(e) Land Clearing and Construction & Demolition Debris (C&D)**	**124,049**	**90,549**	**214,597**	**208,664**	**208,664**
Non-Processibles outgoing from County TS & C&D Export by Collectors and Haulers					

Notes:

* Does not include C&D burned at RRF as MSW.

** Sum of (a) through (m) less (i) less (kk).

Nearly all land clearing and demolition debris generated in the County is transported for processing at out-of-County facilities. A small portion is generated by County road construction and maintenance activities and managed as non-processible solid waste.

The M-NCPPC land clearing and demolition debris rubblefill on Bonifant Road in Silver Spring was permanently closed prior to July of 2003 to comply with Maryland law regarding unlined landfills.

3.1.3 Controlled Hazardous Substances

As indicated in Table 3.4, Controlled Hazardous Substances (CHS) [5] include hazardous waste as defined in COMAR 26.13.01 and special medical wastes as defined in COMAR 26.13.11. These solid wastes require separate collection and disposal from MSW.

3.1.3.1 Hazardous Waste

A hazardous waste as defined in COMAR 26.13.01 is a solid waste which, because of its quantity, concentrations, or chemical, or physical characteristics, poses a substantial present or potential hazard to human health or the environment. In general, State regulations fully regulate any hazardous waste generator that: generates 100 kilograms or more of hazardous waste per month; generates 1 kilogram or more of acute hazardous waste per month; or, stores 100 kilograms or more of hazardous waste on site.[6]

The estimated 14,000 tons of hazardous wastes generated in the County shown in Table 3.4 are derived from a 1995 survey, conducted by MDE, of large quantity hazardous waste generators. Hazardous waste is projected to increase at the same rate as County employment growth. The projected County generation for the Year 2013 is 16,024 tons.

[5] For regulatory definition, see Annotated Code of Maryland, Environment Article, Section 7-201.

[6] For a complete description of State controlled hazardous waste generator requirements, see COMAR 26.13.05

The MDE regulates Treatment, Storage, or Disposal (TSD) facilities of hazardous waste and requires the certification of drivers and vehicles that transport hazardous waste. There are two facilities in the County with TSD permits to store hazardous waste for up to 90 days: the National Institutes of Health in Bethesda and the National Naval Medical Command in Bethesda. The Naval Surface Warfare Center in White Oak and the Safety-Kleen Corporation in Silver Spring were TSD permitted facilities, but are no longer operational. All hazardous waste generated and stored in the County is shipped out of the County for treatment, storage and disposal.

Table 3.4

Controlled Hazardous Substances Generation in Montgomery County

	2004 Processed at County Gov't Facilities	2004 Processed at Private Facilities	2004 Estimated Generation In County	2008 Projected Generation In County	2013 Projected Generation In County
(f) Hazardous Waste	236	13,764	14,000	14,502	16,024
(g) Special Medical Waste	0	3,200	3,200	3,315	3,538

Household Hazardous Wastes (HHW) as well as hazardous waste produced in small quantities by non-residential generators are not included in the COMAR 26.13.01 definition of hazardous wastes. See Chapter 5 of this Plan for a description of County efforts to manage household and small quantity generator hazardous wastes.

3.1.3.2 Special Medical Waste

Special medical wastes as defined in COMAR 26.13.11 include infectious or potentially infectious materials that result from contact with persons or animals

suspected or diagnosed as being or having been exposed to contagious disease organisms.

Special medical waste is generated by hospitals, doctor offices, laboratories and research institutions. Five accredited hospitals are located within the County: Holy Cross Hospital in Silver Spring, Suburban Hospital in Bethesda, Washington Adventist Hospital in Takoma Park, Montgomery General Hospital in Olney and Shady Grove Adventist Hospital near Gaithersburg. Three large Federal hospital and medical research institutions are located in Montgomery County: Walter Reed Army Medical Center Annex in Forest Glen, and the National Naval Medical Hospital and the National Institutes of Health, both in Bethesda.

Special medical waste generation in the County is based on hauler data. The quantity of special medical waste transported by licensed haulers in Fiscal Year 2004 was 3,200 tons. Special medical waste generation is projected to increase at the same rate as County employment growth. Therefore, the quantity generated in the Year 2013 is projected to be 3,538 tons. Data is not available for the amount of special medical waste generated and processed at on-site facilities in the County.

On-site special medical waste incinerators are required to have operating permits issued by MDE. At present, there is no permitted special medical waste incinerator operate in the County.

State law provides for a residential use (e.g., home insulin user) exemption for disposal of home medication material as MSW. Home generated medical waste is not regulated as special medical waste as defined in COMAR 26.13.11.

3.1.4 Animal Carcass

Animal carcasses are a COMAR listed solid waste from various sources including: domestic pets, roadways, County animal shelters, research facilities, farms, restaurants and groceries.

There are no animal carcass solid waste rendering facilities located in the County. Most farm animal carcasses, and bone and fat from restaurants, groceries, and other food services are recycled by rendering facilities in Virginia, and Pennsylvania. Animal shelter and road-kill carcasses are processed at out-of-County special medical waste incinerators or pet crematoria. One privately owned pet crematorium operates under State permit in the County.

In 2004, 4,000 tons of animal carcass solid waste was generated in the County as displayed in Table 3.5. This generation rate is based on hauler reports provided by renderers located in Virginia and Pennsylvania which haul animal carcass waste out of the County, the listed capacity of the two pet crematoria permitted by the State to operate in Montgomery County, and the approximately 15 tons of dead animals collected from County roadways and 12 tons of dead animal carcasses generated by the Montgomery County Animal Shelter. Animal carcass solid waste is projected to increase at the same rate as population changes.

Table 3.5

Animal Carcass Solid Waste Generation in Montgomery County

	2004 Processed at County Gov't Facilities	2004 Processed at Private Facilities	2004 Estimated Generation In County	2008 Projected Generation In County	2013 Projected Generation In County
(h) Animal Carcass	0	4,000	4,000	4,261	4,462

3.1.5 Bulky Waste, Automobiles and Scrap Tires

3.1.5.1 Bulky Waste

As indicated In Table 3.6, approximately 51,574 tons of bulky wastes were generated in Fiscal Year 2004. Bulky wastes include large household appliances (also known as white goods), and large scrap metal. The County recycles over approximately 8,000 tons of metals annually through its scrap metal program. Residents of single family homes may recycle white goods, swing sets, metal furniture, railings, disassembled sheds and other household metal items through the County's curbside collection program. In addition, the County "Don't Dump, Donate" program accepts about 25 tons annually of reusable building materials which are provided for low income housing projects.

Table 3.6

Bulky Waste, Scrap Automobile and Scrap Tire Waste Generation in Montgomery County (Tons/Yr)

	2004 Processed at County Gov't Facilities	2004 Processed at Private Facilities	2004 Estimated Generation In County	2008 Projected Generation In County	2013 Projected Generation In County
(i) Bulky Waste	8,987	42,587	51,574	54,945	57,529
(j) Automobiles	0	61,700	61,700	65,733	68,824
(k) Scrap Tires	202	9,108	9,310	9,918	10,385

Private collectors report delivering approximately 42,587 tons per year of scrap metal to private facilities in the County. In Fiscal Year 2004 the County received over

8,987 tons of “white goods” at the Transfer Station. Bulky waste generation is project to increase consistent with population growth.

3.1.5.2 Automobiles

The regulation of automobiles, other motor vehicles and vehicle junk yards is under the jurisdiction of the State’s Motor Vehicle Administration. Line (j) of Table 3.6 indicates that 61,700 tons of scrap automobiles were generated in Montgomery County in 2004. The Motor Vehicle Manufacturers Association reported national statistics that an average of 8,835,400 cars and 2,258,000 buses and trucks were junked nationally, on average, from 1986 to 1990. This Plan assumes that the County generates scrap automobiles in proportion to national trends. M-NCPPC reports that Montgomery County's population equals 0.31 percent of total U.S. population. The scrap generation rate is derived from County population as a percent of national population and an assumed average vehicle weight of 2850 lbs. per car and 6,170 lbs. per bus and truck.

There are 6 private businesses in the County that process junked vehicles. Scrap automobiles are hauled to automobile recyclers located outside of the County. The Montgomery County Police disposes of abandoned vehicles through public auction. The police process fewer than ten junk automobiles per year, which are sold to scrap dealers.

Future scrap automobile generation is projected in proportion to M-NCPPC population.

3.1.5.3 Scrap Tires

Federal guidelines suggest that scrap tire generation follows population and results in one tire scrapped per capita per year. Based on this guideline, 931,000 tires were scrapped in the County in 2004. Using an average tire weight of 20 lbs. per tire, County scrap tire generation was approximately 9,310 tons in 2004 as shown previously in Table 3.6.

The State of Maryland Scrap Tire Law[7] prohibits the disposal of tires in landfills. Under the provisions of the Law, scrap tires are collected and managed through a State licensing system for the collection, storage, transportation and disposal of scrap tires. The State also regulates scrap tire recycling facilities. There are no permitted scrap tire recycling facilities located in the County. However, many auto service centers in the County arrange for private recycling of their customers' tires at facilities outside of the County.

County residents may drop off four or fewer scrap tires at the Solid Waste Transfer Station for recycling. In Fiscal Year 2004, the County received 202 tons of tires for recycling. MES transports scrap tires from the Transfer Station to one of several State permitted scrap tire recycling facilities.

3.1.6 Wastewater Treatment Biosolids

Biosolids are a COMAR listed solid waste that refers to municipal wastewater solids, formerly referred to as sewage sludge. Current detailed information on the

[7] See MD. CODE ANN., ENV. § 9-228.

County management of wastewater is available in the “2002 Draft Montgomery County Comprehensive Water Supply and Sewerage System Plan.”

Biosolids are generated by the five waste water treatment plants (WWTP) that serve the County. Over 90 percent of the domestic wastewater that is discharged to the public sewerage system in the County, or 79 million gallons per day (mgd) in 2001, is treated at the Blue Plains WWTP. The Blue Plains WWTP is located in Washington, D.C. and is owned and operated by the District of Columbia Water and Sewer Authority (WASA).

The WSSC is responsible for the management of 80 dry tons per day (400 wet tons per day at 20% solids) of biosolids from the Blue Plains WWTP. The Inter-Municipal Agreement of 1985 (IMA), a regional agreement approved by the jurisdictions using Blue Plains, had envisioned that WSSC’s share of the biosolids would all be composted at the Montgomery County Regional Composting Facility (MCRCF). However, due to high costs and community impacts from odors emanating from this facility, the MCRCF was closed in 1999. WSSC presently manages its share of biosolids from the Blue Plains WWTP through contracts for beneficial agricultural cropland applications.

In January 1999, the WSSC stopped sending biosolids to the MCRCF and proceeded with actions that would allow for the permanent closure of the facility. WSSC has received approval from all local, state and Federal interests for the permanent closure of the MCRCF. Land application contracts are now being utilized to manage the entire WSSC share of biosolids from Blue Plains. The contractor determines the land application sites, since permits for biosolids are a requirement of the contractor at the time they submit a bid for this work. Historically, these land application sites have been located in rural Maryland and Virginia where the biosolids are applied as a fertilizer, generally for field crops of corn and soybeans. Wastewater

treatment biosolids that are land applied in Maryland are subject to a Sewage Sludge Utilization Permit issued by MDE.

The four other WWTP facilities in the County are: Seneca, Damascus, Hyattstown, and Poolesville. Table 3.7 shows the total amount of biosolids generated at these WWTP facilities based on the 2003 average daily flows. The Year 2003 average daily flows of these facilities are as follows:

Seneca WWTP	16.0	mgd
Damascus WWTP	0.87	mgd
Hyattstown WWTP	0.04	mgd
Poolesville WWTP	0.59	mgd

Table 3.7

Biosolids Generation in Montgomery County (Dry Tons/Yr)

	2004 Processed at WSSC Facilities	2004 Estimated Generation In County	2008 Projected Generation In County	2013 Projected Generation In County
(l) Biosolids	**1,600**	**1,600**	**6,980**	**8,620**

Current biosolids generation at the four WWTP facilities is estimated at 1,600 dry tons per year. Recently completed expansions to the Seneca Wastewater Treatment Plant are projected to raise biosolids generation to 8,600 dry tons per year by 2013.

3.1.7 Septage

Approximately 50,000 homes in Montgomery County use a septic system rather than a public WWTP. In addition, about two dozen homes rely on sewage holding tanks. Septic system biosolids and sewage holding tanks are periodically pumped by private haulers permitted by WSSC. Pumped biosolids and sewage is discharged into the sanitary sewerage system at a controlled entry point located at the WSSC Muddy Branch facility. Table 3.8 shows the total County septage generation.

Using assumed tank capacities and discharge frequencies, the County estimates septage generation at approximately 18,000 wet tons annually. M-NCPPC projects that the number of homes on septic tanks is not expected to increase markedly over the next decade. Therefore, septic and holding tank sewage generation is projected to remain level through 2013.

Table 3.8

Septage Generation in Montgomery County (Wet Tons/Yr)

	2004 Processed at WSSC Facilities	2004 Estimated Generation In County	2008 Projected Generation In County	2013 Projected Generation In County
(m) Septage	18,000	18,000	18,000	18,000

3.1.8 Other Wastes

3.1.8.1 RRF Ash

The County's RRF combusts MSW, reducing the amount of material requiring disposal by about 70 percent (weight). This residue is transported to a private landfill in Brunswick County, Virginia. Since the RRF first began processing waste in 1995, RRF residue ash has been periodically characterized following protocols established

by the United States Environmental Protection Agency (EPA) and MDE. For each characterization event, a composite sample is aggregated from fourteen representative samples of ash collected over a seven day operations period. The samples are prepared and handled in accordance with EPA guidelines. Laboratory analysis is performed by an EPA certified laboratory following EPA procedures established for the Toxic Characteristics Leaching Procedure (TCLP). TCLP test results to date show that the RRF ash is a non-hazardous solid waste. Therefore, the ash may be recycled, or transported to a MSW landfill.

Table 3.9

	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Ash To Pilot Recycling Contractor (in PA)	0	0	0	0	36,846	29,775	0	0	0
Ash to Brunswick Landfill (in VA)	95,385	118,456	121,322	128,162	101,068	114,950	170,790	161,279	165,236
Total RRF Ash (Residue)	95,385	118,456	121,322	128,162	137,914	144,725	170,790	161,279	165,236

Ash Produced at the RRF and Transported out-of-County (Tons)

3.1.8.2 Agricultural waste

According to the University of Maryland Cooperative Extension Service, agricultural waste, including crop residue and animal manure in the County is generally land applied for beneficial crop use. Some crop residue is left on the field surface to reduce soil erosion. Manure is injected or plowed into cropland. Generation quantities are not available for agricultural waste and are considered insignificant sources of solid waste.

3.1.8.3 Mining waste

No generators of mining waste exist in the County.

3.1.8.4 Litter

The *Keep Montgomery County Beautiful* program of DPWT generates annual litter collection of 7,000 tons.

3.1.8.5 Street sweepings

DPWT and municipalities generate annual street sweepings of 3,000 tons.

3.1.8.6 Recreational wastes

M-NCPPC generates 1,300 tons annually of solid waste at County parks and from within M-NCPPC facility buildings.

3.1.9 Waste Importation and Exportation

3.1.9.1 Importation of Waste into the County

As a matter of policy, County operated solid waste facilities are used only for solid waste generated in the County (see Section 5.1.2.1.b). As a result, no MSW is imported from other jurisdictions to County operated solid waste facilities. With the exception of four private recycling facilities, no major private solid waste facilities exist in Montgomery County that would attract waste generated outside the boundaries of the County (See Table 3.12 for complete list of solid waste facilities in County).

3.1.9.2 Exportation of Waste from the County

Approximately 20 percent of non-recycled MSW generated within Montgomery County is disposed of at facilities outside the County. In addition, 13 percent of MSW generated in the County is recycled at sites other than County-owned facilities (not including backyard composting), many of which are located outside of the County. Based on Table 3.1, approximately 40 percent of the C&D generated in the County is handled by the County Transfer Station, and 60 percent is exported to out-of-County

facilities by the private sector. All other types of solid waste are processed primarily, or exclusively, at out-of-County facilities.

3.1.10 Calculation of MSW Recycling Rate: County and MRA Calculations

Table 3.10 displays the County's current and projected MSW recycling rates that include an estimate of backyard composting of yard trim and grasscycling using a national model. The County estimates that approximately 74,047 tons of yard trim were home composted or grasscycled at single family and multi-family residences during Fiscal Year 2004. The County estimates that an additional 8,227 tons were grasscycled on non-residential properties during the same year. In the absence of these backyard composting and grasscycling efforts, a similar amount of yard trim would have entered the County's solid waste management system.

The MRA, Section 9-1705 of the Environment Article, Annotated Code of Maryland, requires each County to document recycling rates. MDE has developed "Tonnage System Reporting Guidelines" for calculating recycling rates for the purpose of compliance with MRA requirements. County and MDE tonnage measurements of recycling rate follow the same calculations with two exceptions. First, the County rate includes estimates of backyard composting and grasscycling that are based on national models; however, MDE guidelines do not recognize estimates or national models as documented recycling. Second, the County does not include recycled RRF residue, however, MDE guidelines do allow credit for recycled RRF residue.

Table 3.11 displays the County's current and projected MSW recycling rates without backyard composting and grasscycling in conformance with the MRA reporting guidelines developed by MDE.

Table 3.10

Municipal Solid Waste Recycling Rate: County Calculation (Tons/Yr)

Includes Backyard Composting and Grasscycling, and assumes that all tons disposed in RRF were eligible for recycling (e.g. counts C&D burned as MSW)

	2004 Processed at County Gov't Facilities	2004 Processed at Private Facilities	2004 Estimated Generation In County	2008 Projected Generation In County	2013 Projected Generation In County
Residential (Single-Family and Muti-Family)	**501,223**	**130,525**	**631,748**	**663,641**	**694,855**
Recycled	194,068	89,215	283,283	330,042	339,241
Disposed	307,156	41,310	348,466	333,599	355,614
Non-Residential	**356,034**	**268,864**	**624,899**	**679,345**	**725,130**
Recycled	36,648	152,019	188,667	233,153	306,504
Disposed (including C&D burned at County RRF)	319,387	116,845	436,232	446,192	418,626
Municipal Solid Waste (MSW)	**857,258**	**399,389**	**1,256,647**	**1,342,986**	**1,419,985**
		Recycling Rate*	**37.6%**	**41.9%**	**45.5%**

* Projected recycling is conservative. It assumes approval of ER18-04, but it counts C&D burned in RRF as MSW, thus overstating recycling rate denominator.

Table 3.11

Municipal Solid Waste Recycling Rate: MRA Calculation (Tons/Yr)

Does not Include Back Yard Composting or Grasscycling and Assumes That All Tons Disposed in RRF Were Eligible for Recycling (e.g. Assumes no C&D Burned)

	2004 Processed at County Gov't Facilities	2004 Processed at Private Facilities	2004 Estimated Generation In County	2008 Projected Generation In County	2013 Projected Generation In County
Residential (Single-Family and Muti-Family)	**501,024**	**52,323**	**553,347**	**582,063**	**612,191**
Recycled	193,868	11,013	204,881	248,464	256,577
Disposed	307,156	41,310	348,466	333,599	355,614
Non-Residential	**356,021**	**258,383**	**614,404**	**665,557**	**712,953**
Recycled	36,648	141,538	178,186	219,365	294,326
Disposed (including C&D burned at County RRF)	319,374	116,845	436,219	446,192	418,626
Municipal Solid Waste (MSW)	**857,045**	**310,706**	**1,167,752**	**1,247,620**	**1,325,143**
Recycling Rate*			**32.8%**	**37.5%**	**41.6%**
State Recycling Credit for Approved County Reduction Programs			**5.0%**	**5.0%**	**5.0%**
MRA (State) Recycling Rate			**37.8%**	**42.5%**	**46.6%**

* Projected recycling is conservative. It assumes approval of ER18-04, but it counts C&D burned in RRF as MSW, thus overstating recycling rate denominator.

3.2 WASTE COLLECTION METHODS

Under the direction of the Director of DPWT, the Chief of DSWS is responsible for solid waste collection in the County except as specifically designated.

3.2.1 Collection District

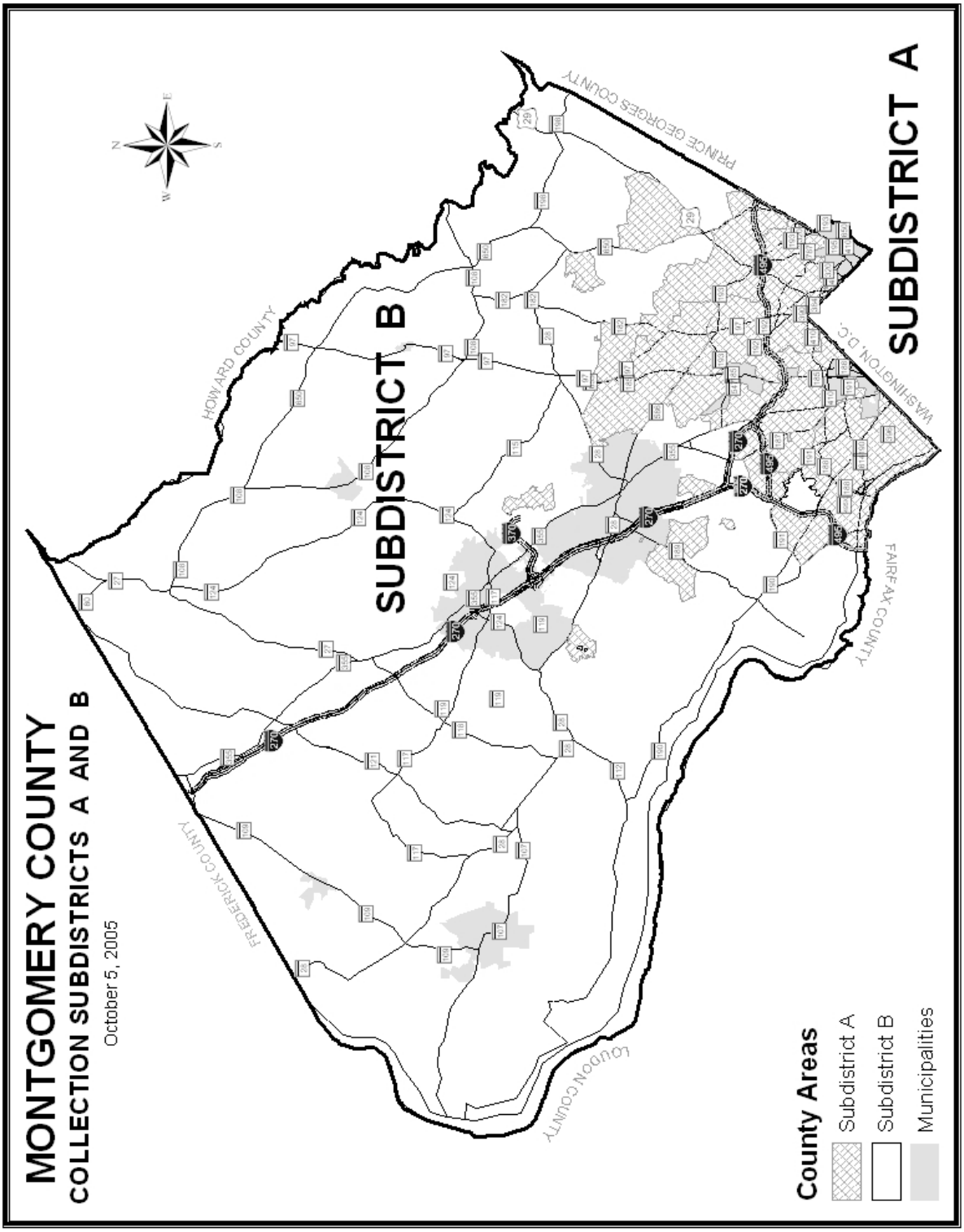
Pursuant to the County Code, Section 48-29, and implementing regulations, the entire County is a collection and disposal district. Pursuant to Sections 48-29, 48-35 and 48-44, the County is authorized to enter into multi-year contracts for the collection of solid wastes within the collection Subdistrict A and to collect charges from the dwelling units that are served. Any city, town, village, special taxing area or community may, by its own initiative, become included in the collection district. The County must not collect solid waste from any building with 7 or more dwelling units. Private collectors may supplement collection for building with 6 or fewer dwelling units or provide collection services to any building with 7 or more dwelling units.

3.2.2 Collection Service Subdistricts

The County (Collection District) is divided into two solid waste collection subdistricts; Subdistrict A and Subdistrict B, as shown in Figure 3.1. DSWS maintains official maps of the subdistrcts.

Figure 3.1

Map of Collection Subdistricts A and B



3.2.2.1 Collection Subdistrict A

Within Subdistrict A, the County provides refuse and recycling collection services, through contracts with private collectors one or more times per week, at the discretion of the Executive. In addition, homeowners or occupants of residences with one or two units in Subdistrict A, may at their own expense, contract directly with collection contractors to obtain supplementary solid waste collection services. In 2004, Subdistrict A included approximately 88,000 single family residences and multi-family residences with six or fewer units.

Bulky objects generated by single-family residences and multi-family residences with six or fewer units in Subdistrict A are collected separately by County-contracted collection services. Certain bulky objects, such as white goods and scrap metal are collected for recycling. Non-recyclable bulky objects are collected for disposal. Bulky object collection does not include construction and demolition debris.

3.2.2.2 Collection Subdistrict B

As in Subdistrict A, the County provides for recycling collection services in Subdistrict B. Refuse collection services are provided by the County through licensed private collectors called Independent Collection Contractors. An Independent Collection Contractor must enter into a collection authorization with the County under terms acceptable to the County which allows it to collect solid waste from residences with 6 or few dwelling units in Subdistrict B. The Independent Collection Contractor contracts directly with its customers for the collection service. In 2004, Subdistrict B included approximately 119,000 households.

3.2.2.3 Collection Subdistrict Transfer

A group of homeowners in either Subdistrict A or B may petition for transfer from its subdistrict to the other subdistrict. The procedures for transfer are as follows:

(a) The group must propose the geographic boundaries of the area to be considered for transfer, referring to streets and other landmarks, and must submit to DPWT a written petition legibly signed by one homeowner from at least 25 percent of the residences in the proposed transfer area. To be eligible for a transfer, an area that is adjacent to the boundary of Subdistrict A and B must contain at least 200 homes; any other area must contain at least 650 homes. In addition, an area that is surrounded by Subdistrict A and contains at least 25 homes is eligible for a transfer.

(b) DPWT must approve the area for transfer after reviewing, or, if necessary, modify the proposed boundaries as appropriate for effective collection. Examples of boundaries that are appropriate for effective collection include, but are not limited to, a major roadway or a stream valley.

(c) DPWT must determine whether the number of residences within the defined boundaries meets the requirements of Subsection (a) and must verify that the petition contains legible signatures from one homeowner from at least 25 percent of the residences within the proposed transfer area. If the petition does not contain signatures from one homeowner from at least 25 percent of the residences within the proposed transfer area, the DPWT Director must deny the transfer request.

(d) Within 120 days after receiving a petition containing the minimum number of valid signatures, DPWT must notify by mail, each homeowner in the proposed

transfer area. The notice must inform each homeowner that households in Subdistrict A are charged an annual collection fee and that households in Subdistrict B are responsible either for contracting for private refuse collection or for disposing of refuse at an approved location. The notice must describe the current level of service and annual fee for County-provided refuse collection service and must inform the homeowner of the availability of private refuse collection services. The notice must also inform each homeowner of the boundaries of the proposed transfer area and of the date and location of a public hearing on the proposed transfer.

(e) The notice sent by DPWT must also include a ballot on which the owner of each residence in the defined area may vote for or against the proposed transfer. Ballots must contain the name and address of the homeowner. DPWT must set a last date for submission of ballots. The last date for ballot submission must be more than 60 days after the ballots are mailed to the homeowners.

(f) DPWT must maintain a list of interested parties that have requested to be contacted of any pending balloting for a Subdistrict transfer. At least 15 days prior to mailing ballots to homeowners, DPWT must notify all listed interested parties of the proposed transfer and of the date and location of a public hearing on the proposed transfer.

(g) DPWT must hold a public hearing on the proposed transfer at least 15 days before the last date for ballot submission.

(h) Within 30 days after the last date for ballot submission, DPWT must tally all votes received and determine whether the number of votes in favor of the proposed transfer exceeds 50 percent of the number of residences in the defined area. A ballot

must be signed by one homeowner to be counted. The results of the balloting must be available for public review.

(i) If the number of votes in favor of the proposed transfer exceeds 50 percent of the number of residences in the defined area, the DPWT Director must send a recommendation to the County Executive regarding the proposed transfer within 45 days after the last day for ballot submission. The County Executive must approve or disapprove the transfer within 30 days after receiving the DPWT Director's recommendation. DPWT must mail notice of the County Executive's decision to each homeowner in the proposed transfer area, the County Council, and listed interested parties. If the County Executive approves a transfer, this notification also must specify the effective date of the transfer.

(j) If the number of votes in favor of the proposed transfer does not exceed 50 percent of the number of residences in the defined area, the DPWT Director must deny the transfer request.

(k) DPWT must not accept a petition for a re-balloting of any area or any substantially similar area for two years after the last date for submission for a previous balloting. DPWT may at any time make minor changes to subdistrict boundaries to correct errors or to remedy anomalies.

3.2.3 County Contracted Recycling Collection

3.2.3.1 Single Family Recycling Collection Service

County Regulation 109-92AM establishes the entire County as a recycling service area. All single family residences in the County, with the exception of those in certain incorporated municipalities, receive curbside collection of mixed paper, glass containers, aluminum and bi-metal cans, certain plastic containers, grass, brush, leaves, Christmas trees and large household appliances ("white goods") and select other scrap metals. Chapter 48 of the County Code mandates participation in the curbside recycling program for all residents of dwellings having six or fewer units.

The County will continually work with homeowner associations, management groups and other citizens groups to customize, whenever feasible, recycling collection services to meet special needs particular user groups, including townhouse residents, senior citizens and the disabled.

3.2.3.2 Processing, Marketing and Disposition of Recovered Materials

All recyclable materials received through the curbside collection program are transported to the County's MRF (see Section 3.3.1.3).

Residential mixed paper is transferred to trailers and shipped to a private recycling company for grade separations and transport to paper mills and other secondary paper fiber markets.

Commingled glass, aluminum, bi-metal and plastic containers are run through a mechanical and hand separating system. Separated recyclables are shipped to private brokers or dealers in the secondary materials markets.

Grass and leaves are shipped by truck and rail to the County's Yard Trim Composting Facility where they are composted in an open-air windrow operation using mobile turning and shredding equipment (see Section 3.3.1.4). Finished compost is sold commercially in bulk and bagged form as a soil amendment product. Community agreements limit bagging production at the facility to 500,000 bags per year.

Brush and Christmas trees are chipped at the Transfer Station and provided as free "green" mulch to commercial mulch vendors and to residents at selected sites around the County.

White goods and other scrap metals are sold to private scrap metal recyclers. Motor oil, antifreeze, auto batteries, computers, usable building materials and textiles are recycled through various outlets.

3.2.4 County Leaf Collection Service

DPWT vacuums leaves from public rights-of-way within the Leaf Collection District (see Figure 3.2) from November through January and at such other times as the Department may determine. Leaves collected from public rights-of-way are composted at the Yard Trim Composting Facility. The County has implemented a regulation (Executive Regulation 6-99AM in Appendix H) allowing communities to opt in/out of the leaf collection district.

3.2.5 Waste Collection in Incorporated Municipalities

There are 19 incorporated municipalities within Montgomery County with responsibility for the collection of refuse and recyclables from within their jurisdictions. See Table 2.2 for a list of municipalities. Municipalities have the option of delivering refuse to the County Transfer Station and recyclables to the County MRF.

3.2.6 Independent Waste Collection

The collection and disposal of wastes generated on multi-family residential properties with seven or more units and non-residential (commercial, industrial and institutional) properties is the responsibility of the property owner. Wastes from these sources are either collected by a private collection company or self hauled to a waste acceptance facility. Independent commercial collectors must have a Montgomery County solid waste hauling license.

Private commercial collectors also provide recycling collection service to multi-family residential and nonresidential properties. These collectors deliver recyclable material to private facilities located inside and outside the County.

Private commercial collectors also provide refuse collection service to single family residences in Subdistrict B, as described above and refuse and recycling collection to single family residences in some incorporated municipalities.

As of April 2004, there were 215 firms licensed to provide collection service to single family, multi-family, and commercial establishments in the County.

3.2.6.1 Collection Frequency

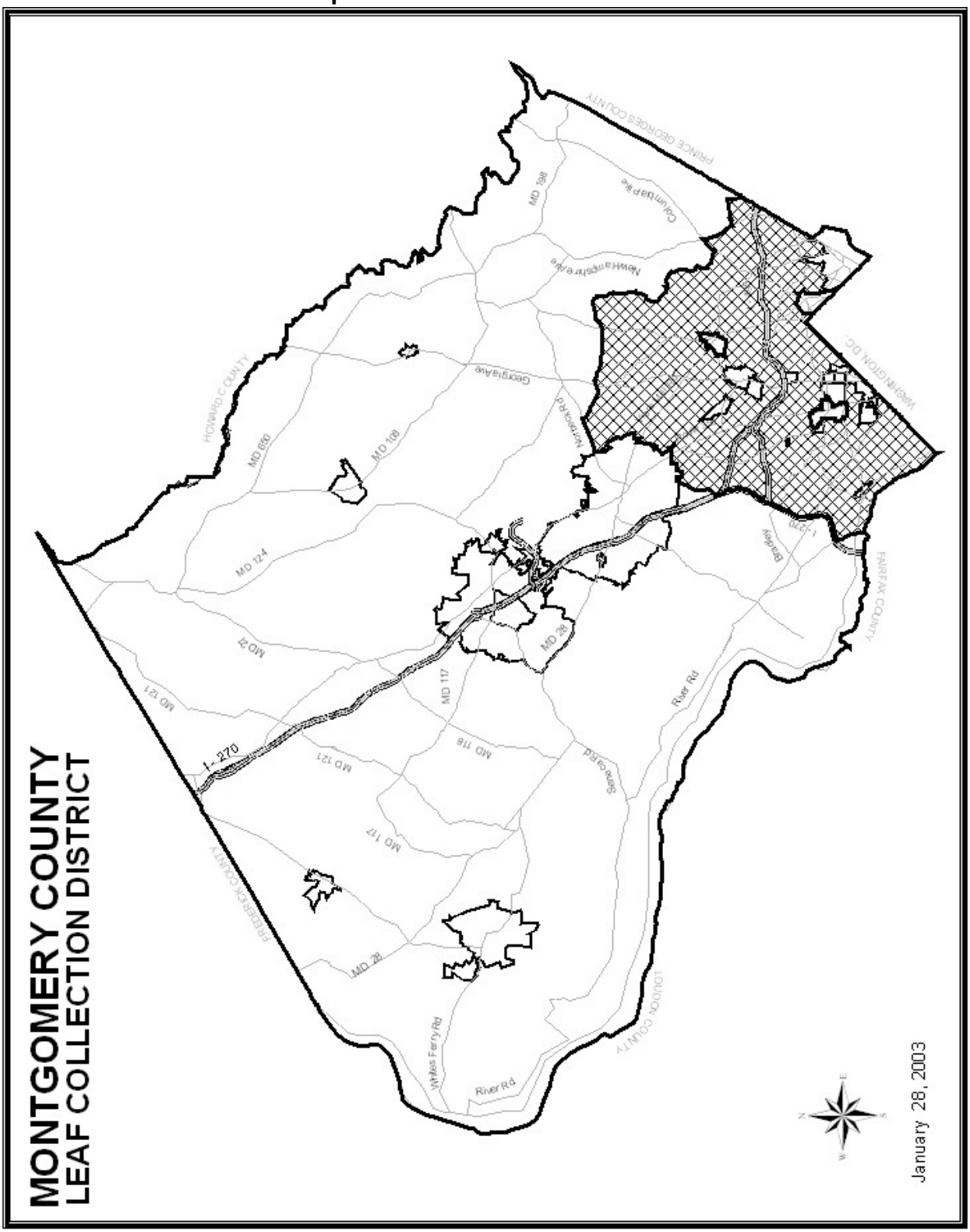
Regularly scheduled collection service is mandatory for all sources, except for commercially generated construction and demolition debris.

Refuse removal frequency is to be in accordance with the quantity and type of wastes generated and the on-site storage capacity of the generator. Refuse generators either provide collection services or contract with licensed haulers for collection.

Highly putrescible wastes, such as seafood waste, are removed from commercial premises daily, unless the waste is discharged directly into a sanitary sewer system, or is stored in refrigerated storage. As stated in Section 48-24(e)(2) of the Montgomery County Code, the existence of objectionable odors at the nearest adjoining premises is evidence of insufficient removal frequency.

Figure 3.2

Map of Leaf Collection District



3.2.6.2 Collection of hazardous and special medical wastes

Hazardous and special medical wastes are not put out for regular refuse collection. Hazardous wastes are transported by permitted hazardous waste haulers to permitted TSD facilities. Special medical wastes are to be destroyed by proper incineration on the premises or transported by a permitted special medical waste hauler to a permitted special medical waste disposal facility.

3.2.7 Waste Collection and Transportation Conditions

3.2.7.1 Licensure

No person may engage in the business of collecting or transporting refuse within the County without first obtaining a Collector's license from DPWT.

Any company or person engaged in or to become engaged in the business of collecting solid waste as a licensed collector or hauler under the terms of the Montgomery County Code may apply to be an Independent Collection Contractor authorized to collect solid waste on behalf of the County from residences included in the Solid Waste Collection and Disposal District. Only licensed collectors may be Independent Collection Contractors.

Licensees must operate fully in accordance with the Montgomery County Code. In accordance with Executive Regulation 58-92AM, all County-Licensed collector's and hauler's must submit a semi-annual tonnage report.

3.2.7.2 Solid Waste Transport

The County requires that vehicles used in the transport of solid wastes shall be such that blowing refuse, litter, and spills of putrescible and noxious materials will not occur. Generally, such vehicles will have an enclosed, water-tight steel body of the packer type that is readily cleanable and sanitary. An exception is made in the case of vehicles used only for hauling building materials, trees and parts of trees, rubble, refuse packaged in cardboard boxes or plastic bags, abandoned vehicles, machinery, appliances and other non-combustible materials. It further requires that the vehicles shall be operated in a safe and sanitary manner and upon such a schedule that the impact on traffic is kept to a minimum.

Hauling routes to be used by public vehicles and vehicles under contract to the County, and their schedules of operation, are designated by the County Executive.

3.2.7.3 Delivery of Solid Waste from Collection and Disposal District

Solid waste that is collected on behalf of the County may be delivered to the Transfer Station.

Independent Collection Contractors are not presently required to pay a tip fee at the Transfer Station for solid waste collected on behalf of the County, provided that they are not in breach of the Independent Contractor Authorization. Independent collection contractors are prohibited from billing County residences for any portion of the refuse disposal tip fee. The County bills residents within the Collection and Disposal District for the tip fee portion of the residential solid waste charge.

3.2.8 Litter

3.2.8.1 Maryland Litter Control Law

The Maryland Litter Control Law[8] makes it unlawful for any person or persons to dump, deposit, throw or leave, or to cause or permit the dumping, depositing, placing, throwing or leaving of litter on any public or private property in this State, or on any waters in this State, unless it is deposited at a properly permitted waste disposal facility, placed in a proper receptacle, or is lawfully deposited on private property in a manner consistent with public welfare.

All law enforcement agencies, officers, and officials of the State or any political subdivision thereof, or any enforcement agency, officer or any official of any commission of this State or any political subdivision thereof, are authorized, empowered and directed to enforce compliance with the Litter Control Law.

3.2.8.2 County Litter Control Authority

Whenever any readily movable property of any kind, such as, but not limited to, furniture, appliances, personal effects, etc., is abandoned or left in violation of any law, ordinance or order on public or private premises, it may be removed in accordance with Chapter 32-1 of the Montgomery County Code.

3.2.9 Septage Collection

[8] MD CODE ANN., CRIM LAW §10-110 (2002)

Septage is collected, primarily in those parts of Montgomery County which are not served by sewers, by private contractors operating under a permit from WSSC.

3.3 WASTE ACCEPTANCE FACILITIES

As displayed in Table 3.12, there are several waste management facilities in Montgomery County. In Maryland, landfills, transfer stations, resource recovery facilities and special medical waste incinerators require a solid waste and/or air emissions permits from the MDE. Recycling and composting facilities generally do not require a MDE Refuse Disposal Permit or Air Quality Permit. Solid waste facilities may be subject to other permit requirements (such as storm water runoff control). As discussed in Chapters 2 and 5, private solid waste facilities are subject to County zoning requirements.

3.3.1 County Solid Waste Facilities

The County's existing solid waste management system is served by several principal facilities, each described below. The locations of each in-county facility that comprises the solid waste management system appear in Figure 3.3.

3.3.1.1 Transfer Station

Refuse collected by permitted solid waste haulers and collectors is processed at the Solid Waste Transfer Station. The Transfer Station is located on a 45-acre site adjacent to the MRF site in Derwood. The Transfer Station has been in operation since the spring of 1982 and has a waste operating permit limit of 821,500 tons per year. In 1995, modifications were completed at the Transfer Station as part of the development

of the Transportation System to facilitate rail haul of processible waste to the RRF. Three solid waste compactors were installed to compress up to 30-ton loads of solid waste into logs that are mechanically discharged into 40-foot containers. Containers of compacted waste are driven to the rail yard for shipment to the RRF. Non-processible waste received at the Transfer Station that can not be recycled is transported by tractor trailer to a private landfill in Brunswick County, Virginia. Processible waste can also be bypassed directly to the County's contracted landfill if necessary. To safeguard the Transfer Station from unacceptable radioactive waste, radiation detectors are located at the entrance to the tipping floor, the inbound truck scale and the contractor's dedicated scale. Inspectors also routinely check waste loads for other types of unacceptable materials.

The Transfer Station provides a public unloading area for unloading refuse and recyclable materials delivered in passenger vehicles. This area receives all of the materials accepted in the County's residential curbside collection program. It also promotes reuse and waste toxicity reduction by accepting materials including computers, automotive fluids and batteries, rechargeable batteries, building materials, textiles, and tires.

The Transfer Station also includes areas for yard trim (grass, leaves, brush, and Christmas trees) collected through the curbside recycling program or delivered to the site by residents and landscapers. Most of the leaves and grass are first ground and then transferred to the County Yard Trim Composting Facility. Brush and Christmas trees are ground on site into mulch and transported to County sites where it is available for no charge to County residents and commercial mulch vendors.

Table 3.12

Solid Waste Facilities Located in Montgomery County

Facility Type/Name	Location	Owner	Permit Status	Operating Status	Remaining Life	Types of Waste	2004 Tons
Recycling Facilities							
Georgetown Paper Stock	535-B Southlawn Ln Rockville	Georgetown Paper Stock, Inc.	not applicable	active	indefinite	paper products	16,392 (CY03)
Montgomery County Materials Recovery Facility	16101 Frederick Rd Derwood	Montgomery County	not applicable	active	indefinite	paper products; containers (Al, Fe, glass, plastic)	88,352 (FY 04)
Montgomery Scrap	15000 Southlawn Ln Rockville	Montgomery Scrap Corp.	not applicable	active	indefinite	scrap metal	24,582 (CY03)
Office Paper Systems	7650 Airpark Rd Gaithersburg	Office Paper Systems, Inc.	not applicable	active	indefinite	paper products	5,889 (CY03)
Southeast Recycling	9001 Brookville Rd Silver Spring	Southeast Recycling, Inc.	not applicable	active	indefinite	paper products; Al containers	4,827 (CY03)
Composting Facilities							
Montgomery County Yard Trim Compost Facility	21210 Martinsburg Rd Dickerson	Montgomery County	permitted	active	indefinite	leaves and grass	76,972 (FY 04) varies by weather
Construction Debris Reclamation Facilities							
C&D Recovery LLC	24220 Frederick Rd Clarksburg	Environmental Alternatives Reclamation, Inc.	permitted	active	- -	construction and demolition debris	Permit is 225,000 tons per year.

Table 3.12 (con't)
Solid Waste Acceptance Facilities, Montgomery County, Maryland

Facility Type/Name	Location	Owner	Permit Status	Operating Status	Remaining Life	Types of Waste	FY 04 Tons
Transfer Stations, Public							
Montgomery County Solid Waste Transfer Station	16101 Frederick Rd Derwood	Montgomery County	permitted 2001-WTS-0328	active	indefinite	MSW, Nonprocessibles Yard Trim Other recyclables	646,169[9] 124,049[10] 69,494 13,325
Sanitary Landfills							
Gude Sanitary Landfill (closed)	600 E. Gude Dr Rockville	Montgomery County	permit expired	inactive	closed facility	- -	- -
Oaks Sanitary Landfill (closed)	6001 Olney-Laytonsville Rd near Laytonsville	Montgomery County	permit expired	inactive	closed facility	- -	- -
Site 2 Landfill Site (in reservation)	near Martinsburg Rd & Wasche Rd Dickerson	Montgomery County	permitted 2002-WMF-0237[11]	land reserved for possible future need	- -	- -	- -
Rubblefills							
Bonifant Road Rubblefill (closed)	1201 Bonifant Rd Silver Spring	Maryland-National Capital Park and Planning Comm.	permit expired	inactive	closed facility	- -	- -

[9] Amount loaded on rail to the RRF
[10] Nonburnable materials going to recycling or a landfill
[11] An appeal of the permit issuance in Montgomery County Circuit Court is still pending and has been suspended indefinitely until such time as the County might decide to construct the facility.

Table 3.12 (con't)
Solid Waste Acceptance Facilities Montgomery County, Maryland

Facility Type/Name	Location	Owner	Permit Status	Operating Status	Remaining Life	Types of Waste	FY 04 tons
Resource Recovery Facilities Montgomery County Resource Recovery Facility	21204 Martinsburg Rd Dickerson	Montgomery County (land); Northeast Md. Waste Disposal Authority (RRF)	permitted 1998-WTE-0538	active	indefinite	municipal solid waste (MSW and C&D burned and counted as MSW)	639,764 loaded on rail at TS, 640,100 processed at RRF
Special Medical Waste Incinerators Bioqual, Inc.	2501 Research Blvd Rockville	Bioqual, Inc.	permit expired	inactive	- -	- -	- -
Montgomery General Hospital	18101 Pr. Phillip Dr Olney	Montgomery General Hospital	permit expired	inactive	- -	- -	- -
PerImmune, Inc.	1330A Piccard Dr Rockville	PerImmune, Inc.	permit expired	inactive	- -	- -	- -
Shady Grove Adventist Hospital	9901 Med. Center Dr Rockville	Shady Grove Adventist Hosp.	permit expired	inactive	- -	- -	- -
Pet Crematoria Final Tribute Pet Crematorium	18620 Darnestown Rd Beallsville	Final Tribute Pet Crematorium	permit expired	inactive	- -	- -	- -
Heavenly Days Animal Crematory	605 S. Stonestreet Rockville	Heavenly Days Animal Crematory	permitted	active	indefinite	dead animals	<1 tpd

3.3.1.2 Resource Recovery Facility

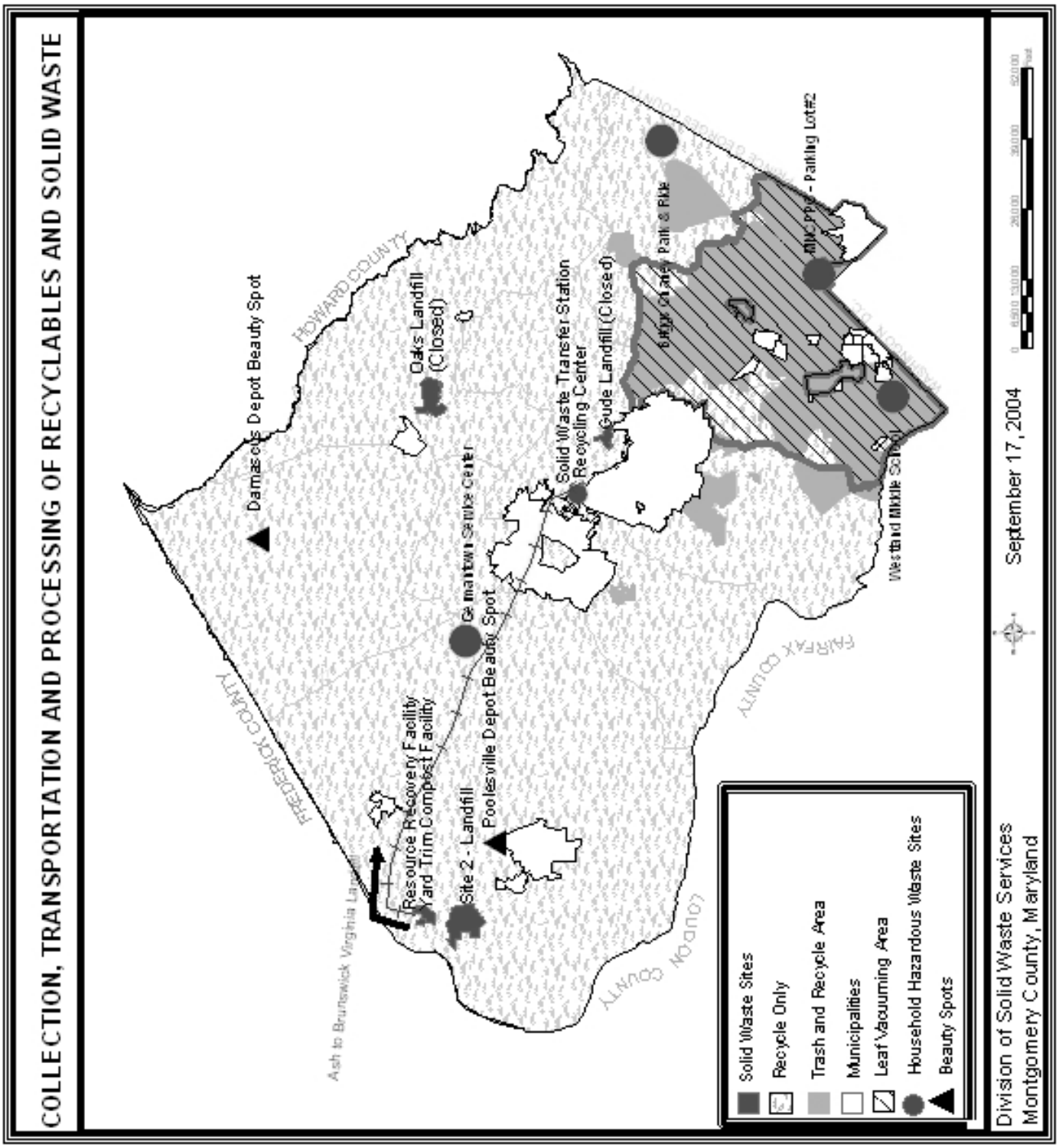
In August 1995, the County began operation of a mass-burn RRF in Dickerson, Maryland. With the exception of occasional bypass as necessary, all non-recycled processible waste delivered to the County's Solid Waste Transfer Station is consolidated and transported by rail to the RRF for waste-to-energy incineration. In addition to energy recovery, ferrous metal is recovered from RRF residue and sold to scrap metal dealers. To safeguard the RRF from radioactive waste, radiation detectors are located at the entrance to the tipping floor and in the ash handling system area.

The RRF consists of three 600 tons per day mass-burning, refuse-fired boiler units producing high pressure, high temperature steam for electrical power generation. The RRF is located on 34 acres of land adjacent to the electric generation station near Dickerson owned by a subsidiary company of Mirant Americas Energy Marketing, LP (MAEM). An Electricity Sales Agreement provides that NMWDA delivers and sells, and MAEM accepts and purchases, all electricity, net of in-plant usage by the RRF, according to a pre-negotiated rate schedule.

NMWDA financed the cost of designing and constructing the RRF and related transportation improvements necessary for the project. NMWDA owns the facility, leases the facility property from the County and contracted for the facility design, construction, and operation through a Service Agreement with Covanta Montgomery, Inc., f/k/a Ogden Martin Systems of Montgomery, Inc., a subsidiary of Covanta Energy Corporation, f/k/a Ogden Corporation. The County has entered into a Waste Disposal Agreement with NMWDA for the disposal of non-recycled waste.

Figure 3.3

Facilities of the County Solid Waste Management System



3.3.1.3 Materials Recovery Facility

The MRF, also known as the Recycling Center, is located on a 10-acre parcel of land in Derwood, Maryland, contiguous to the Transfer Station. Recyclable materials collected at the curb from single family residences including mixed paper and commingled containers are accepted at the MRF. The MRF also receives recyclables from multi-family residences and some commercial sources. MES operates the MRF under the terms of an intergovernmental agreement with the County.

Residential mixed paper is transferred at the MRF onto OPS containers and shipped to the OPS mixed paper recycling facility. The MRF has a transfer capacity of 346 tons of mixed paper per 8-hour shift, and is operated one shift per operating day.

Commingled containers, including glass and plastic bottles, aluminum, ferrous and bi-metal cans and aluminum foil, are sorted and baled at the MRF through a combination of mechanical and hand separation. Sorted and baled recyclables are sold to various markets for remanufacture. The MRF has a sorting capability of 100 tons of mixed containers per 8-hour shift, and is operated on the basis of one shift per operating day.

3.3.1.4 Yard Trim Composting Facility

In 1983, the former WSSC sewage sludge composting facility on the “Matthews Farm” near Dickerson, Maryland was converted into a County managed leaf composting facility. In 1992, the County began composting both leaves and grass at the facility. Leaves and grass are composted at the facility in an open-air windrow

operation using mobile turning and shredding equipment. The facility produces compost that is dried and screened for commercial bulk and bagged markets. Facility operations occur on a 48-acre bituminous pavement pad. The entire facility site covers 118 acres.

The MES operates the Yard Trim Composting Facility under terms of an intergovernmental agreement with the County. Agreements between the County and the Sugarloaf Citizens Association require that the facility accept no greater than 77,000 tons of yard trim per year and that the bagging operation not exceed 500,000 bags per year.

3.3.1.5 Beauty Spots: Satellite Drop-off Centers

DPWT operates two satellite drop-offs facilities (also referred to as convenience centers or “Beauty Spots”) for the purpose of citizen disposal of non-putrescible residential solid waste. These convenience centers are located at DPWT Division of Highway Services (DHS) transportation depots: one in Poolesville at 19200 Jerusalem Road and one in Damascus at 26149 Ridge Road. Operating hours for citizens' waste disposal are limited to weekends, from 9:00 a.m. to 5:00 p.m. on Saturdays, and from 9:00 a.m. to 1:00 p.m. on Sundays.

The satellite convenience centers were started by the Division of Highway Services (DHS) in the mid-1980s in an effort to eliminate roadside trash dumping. Soon after DHS started the convenience centers, DSWS took over the management of the contract to haul waste from the convenience centers and DHS continued the daily operations at the sites. Typical materials received at the centers are large, bulky items such as home remodeling debris, furniture, white goods, and yard waste (Poolesville only).

During operating hours, two DHS employees are present to direct incoming traffic, operate the machinery used to move the waste, and monitor the site. In addition to providing service during the weekend operating hours, the DHS employees work at the site during the week to load waste quantities into stand-by roll-off containers.

The County contracts with a local hauler to provide empty waste containers and transport of loaded containers. Generally, the contracted hauler provides empty roll-off containers at the depots prior to 3:00 p.m. on Friday of each week.

3.3.1.6 Out-of-County Landfill

The County entered into a contractual agreement to transport RRF ash, non-processible waste and bypass waste for disposal at a private landfill in Brunswick County, Virginia, at least until the Year 2012. The landfill is owned by Brunswick Waste Management Facility, Inc., (BWMF) a wholly owned subsidiary of Allied Waste Industries of North America, Inc. The contract prohibits the storage, handling or disposal of any waste delivered by the County at any site or facility other than those explicitly approved by the County. The County no longer manages Regulated Asbestos Containing Material (RACM) and does not use the landfill for its disposal.

The private landfill in Brunswick County, Virginia, is a permitted Subtitle D facility that opened in March 1997. The County's contract provides for disposal of County waste in a dedicated landfill cell reserved for County waste exclusively. All permits needed for this site are current and valid. The remaining capacity for the dedicated cell is 24 years at the current disposal rate from the County. The contract may be extended for five additional years under the existing contract terms, through 2017, at the County's option. There are no requirements for negotiations or additional obligations to extend the contract.

3.3.1.7 Land Reserved for Potential Future In-County Landfill

The County has acquired approximately 820 acres along Wasche Road near Dickerson, Maryland to be held in reserve for use in the event economic conditions or changes in law render out-of-County waste disposal infeasible. The location reserved for possible future landfill use is known as "Site 2." While the out-of-County landfill option remains viable, the County intends to maintain the current agricultural use of the

Site 2 location. With the exception of activities to preserve select historic structures on the former "Chiswell Farm," the County will not make any improvements to the site as long as the out-of-County landfill option remains viable.

3.3.2 Waste Transportation System

The waste transportation system primarily consists of moving wastes from the Transfer Station to the RRF, from the RRF to the out-of-County landfill, and from the Transfer Station to the out-of-County landfill.

3.3.2.1 Transfer Station to RRF: Processible Waste and Yard Trim

Processible waste received at the Transfer Station is hauled 18 miles by rail to the RRF. Processible waste is rail hauled in forty-foot long intermodal containers. Containers are stacked two high on lightweight, special purpose rail cars and travel via an existing railroad right-of-way between a railroad yard adjacent to the existing Transfer Station and a 1.2 mile access track and rail yard adjacent to the RRF. Trains are pulled by CSX Transportation locomotives using CSX tracks. Material that can be recycled such as asphalt and concrete are transported via truck to rubble recycling facilities.

In addition, a portion of the yard trim sent to the Yard Trim Composting Facility is transported from the Transfer Station via rail.

3.3.2.2 RRF to Out-of-County Landfill: RRF Ash

Brunswick Waste Management transports ash from the RRF in 20 ft. intermodel containers via rail over existing commercial rail lines to a depot in Petersburg, Virginia. From the rail depot, the containers are transferred to truck trailers for roadway transport to a privately owned landfill in Brunswick County, Virginia.

3.3.2.3 Transfer Station to Out-of-County Landfill: Other Wastes

Brunswick Waste Management transports non-processible waste and bypass waste received at the Transfer Station that can not be recycled via over-the-road trailers to its privately owned landfill in Brunswick County, Virginia.

3.3.3 Adequacy of Waste Acceptance Facilities

The County charges tip fees for MSW and recyclables delivered to the County facilities (see Section 5.4.2.1). DPWT recognizes the tip fees affect the amount of waste received in County facilities and the pricing will be used to control the demand on County facilities. After applying the tip fee strategy, the combined facilities located in Table 3.11 (In-County facilities) and facilities located outside Montgomery County adequately address the disposal and recycling need for MSW generated within the County. While nearly 80 percent of the non-recycled MSW generated in the County is accepted at County facilities, the remainder of the generated MSW is transported to private facilities located outside of the County.

Nearly all single family recyclables are received at County facilities. An estimated 69,933 tons of yard trim from single family residences are managed on-site by means of backyard composting and grasscycling.

Recyclables generated by the multi-family residential, commercial, industrial and institutional generators are processed at either the County MRF or private facilities. In-county facilities are listed in Table 3.11. There are other private facilities located outside the County that may also receive some of the County's recyclables.

A recently permitted private construction debris reclamation facility in Clarksburg is anticipated to accept construction and demolition debris.

No hazardous waste disposal facilities exist in the County. As indicated in Table 3.12, all permits for special medical waste incinerators have expired and only one permitted pet crematorium operates in Montgomery County.